BRIDGER PLANT MATERIALS CENTER

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GETTING STARTED

PLANTING A WILDFLOWER SEED MIX IS A GREAT WAY TO CREATE HABITAT FOR NATIVE POLLINATORS, beneficial insects, and honeybees. However, choosing which seed mix to buy can be a daunting task because there are many different mixes available on the commercial market that vary widely in price and species composition. The following tips, compiled from studies and trials conducted at the Bridger Plant Materials Center, should generally apply to most of Montana and Wyoming.

Natural Resources Conservation Service

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WHAT YOU NEED TO KNOW WHEN PICKING YOUR MIX

Percent of each species and total seeds per pound in the mix. Some vendors do not publish this information on their website or the seed label but will provide it if you ask them. If they are unable to supply this information, we recommend that you find another vendor who can tell you what you're buying. Use the percentages to determine the balance of annuals, short-lived perennials, and long-lived perennials in the mix (aim for 20 to 40% of each type).

Find the following publications at: www.mt.nrcs.usda.gov > Topics > Plants & Animals > Plant Materials Program > Technical Notes

VENDOR LISTS

Plant and Seed Vendors for Idaho, Montana, Nevada, Oregon, Washington and Wyoming

Crop Seed Vendors for the Western States

FURTHER READING

Montana Native Plants for Pollinator-Friendly Plantings

Creating and Enhancing Habitat for Pollinator Insects

Bridger Plant Materials Center - all publications

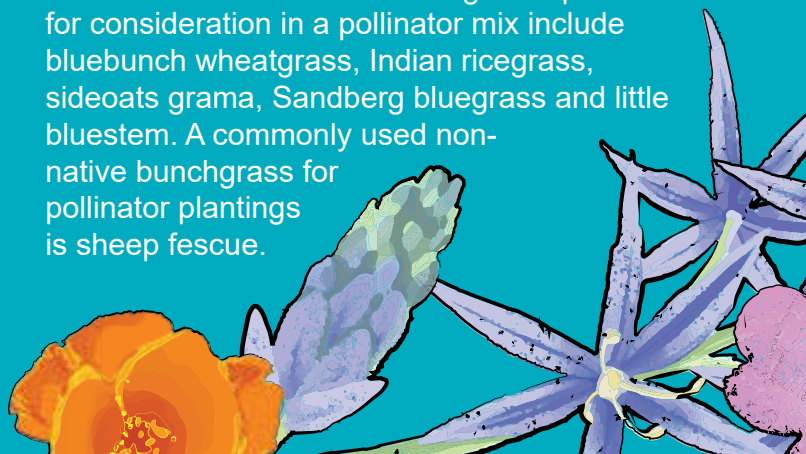
COMPONENTS OF A GOOD POLLINATOR SEED MIX

1. Establishing season-long bloom is important for sustaining pollen and nectar resources for pollinators throughout the growing season. Mix specifications by the Natural Resources Conservation Service (NRCS) generally require establishment of at least three species from each bloom period: early (April, May, and June), mid (July and August), and late season (September and October). Ideally, you should have annuals and perennials in each bloom period to ensure season-long bloom every year.

2. The Bloom Calendar (page 4) lists ideal flowering plants for this region. Use a balance of annuals, short-lived perennials, and long-lived perennials in your seed mix. Annuals provide first year bloom and cover while the perennials are becoming established, but usually fall out completely by the third year. Short-lived perennials bloom heavily in the second year, usually re-seed, and continue to fill in bare areas in the planting. Long-lived perennials will continue to bloom every year and expand over time.

3. Watch out for species that may dominate a mix. Common yarrow or non-native legumes (e.g. clovers) can become weedy without proper management because of high amounts of volunteer seed and rhizomatous growth or branched roots.

4. Bunchgrasses, used in small proportions (15% or less of the mix), can provide good insect nesting habitat and prevent soil erosion in winter. Native bunchgrass species for consideration in a pollinator mix include bluebunch wheatgrass, Indian ricegrass, sideoats grama, Sandberg bluegrass and little bluestem. A commonly used non-native bunchgrass for pollinator plantings is sheep fescue.



SEEDING RATE

Seeding rate should be high enough to establish a solid stand of your planted species so weeds don't have space to move in. We suggest a seeding rate of approximately 20 to 30 seeds/ft^2.

For small amounts of seed, many vendors sell packets of a given weight and provide a suggested area of coverage, but their rates may be too high or too low. Use the example calculations below to determine how much seed you will need to cover the area you intend to plant at a rate of 20 to 30 seeds/ft^2.

Useful conversion factors
1 pound = 16 ounces = 454 grams
1 acre = 43,560 square feet

Example 1
You want to plant a 1,000-square foot area with a seed mix that has an average of 150,000 seeds per pound.

20 to 30 seeds/ft^2 ÷ 150,000 seeds/lb x 1000 ft^2 = **0.13 to 0.2 lb (or 59 to 91 grams) of seed needed**

Example 2
You buy a 3.5 gram seed mix packet that has an average of 160,000 seeds per pound. How much area will it cover?

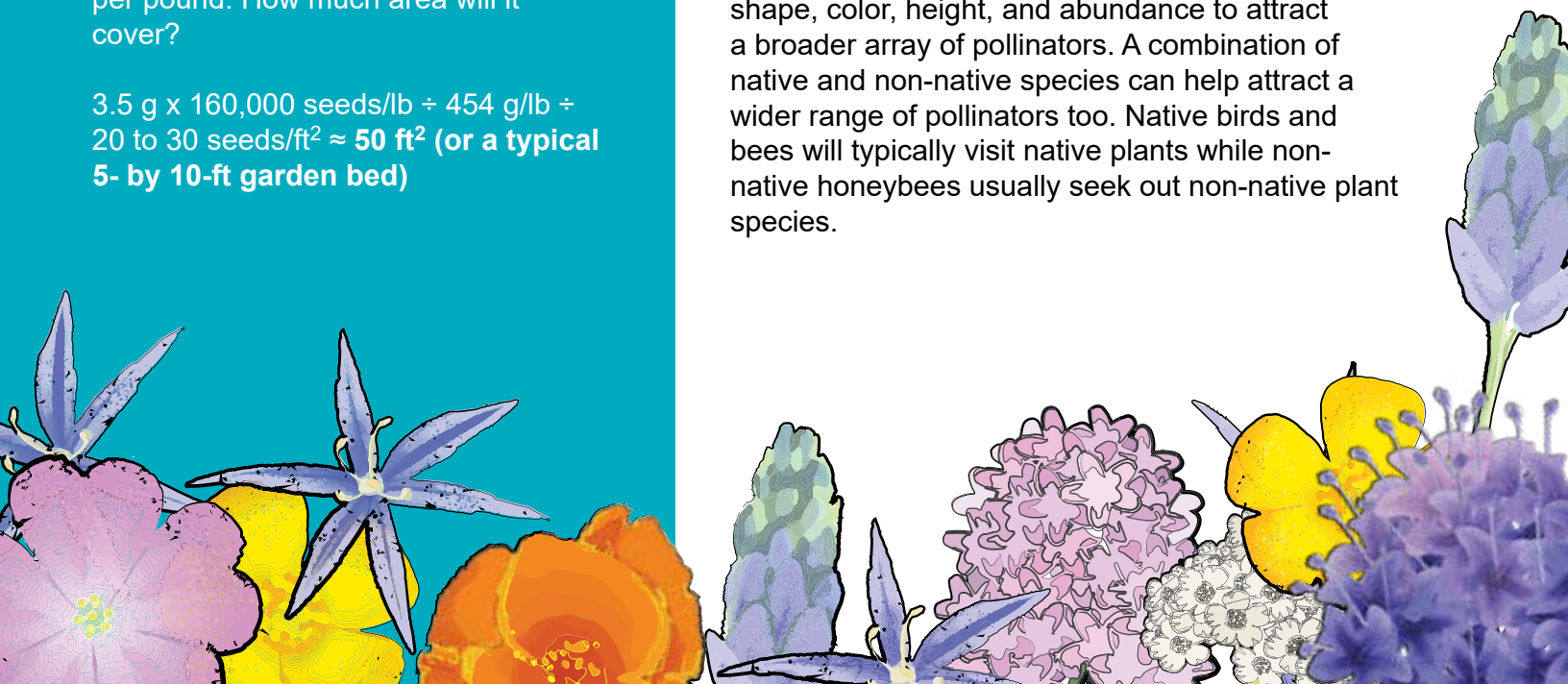
3.5 g x 160,000 seeds/lb ÷ 454 g/lb ÷ 20 to 30 seeds/ft^2 ≈ **50 ft^2 (or a typical 5- by 10-ft garden bed)**

NATIVE VS. NON-NATIVE

Mixes don't need to consist exclusively of species native to Montana or Wyoming to provide good habitat for pollinators and beneficial insects. However, native species often establish and persist better over time, while some non-native species are more likely to outcompete other species in a mix. For example, non-native clovers, tend to establish better than other components in the mix and will eventually become the dominant species in the planting. Other non-native species, such as sunflower and lacy phacelia, establish well, provide excellent habitat and readily reseed themselves.

Be aware that pre-made mixes may contain mostly non-native species that may not be ideal for your specific conditions. If purchasing a pre-made mix, it's important to review the list of species and check it against the core list of recommended species from the Bloom Calendar (page 4). If you are unsure about a species in your mix, utilize the PLANTS Database (plants.usda.gov) to find its native range and its invasive status in your region. When in doubt, buy seed from vendors who use local ecotypes.

If you develop your own pollinator seeding mix, select a wide diversity of plants that bloom throughout the growing season. Bloom period is one way to diversify; however, it can be useful to consider other characteristics such as flower size, shape, color, height, and abundance to attract a broader array of pollinators. A combination of native and non-native species can help attract a wider range of pollinators too. Native birds and bees will typically visit native plants while non-native honeybees usually seek out non-native plant species.



BLOOM Calendar

COLOR INDICATES THE SEASON EACH FLOWER IS IN BLOOM FOR THESE NATIVE AND NON-NATIVE SPECIES THAT DO WELL IN MONTANA AND WYOMING

Common Name / *Scientific Name*	Seeds per Pound	Seeding Time	Bloom Period: Early	Bloom Period: Mid	Bloom Period: Late	Forb Type
Black-eyed Susan *Rudbeckia hirta*	1,746,000	Spring or Fall				ANNUAL
Common sunflower *Helianthus annuus*	81,000	Spring or Fall				
Lacy phacelia* *Phacelia tanacetifolia*	245,000	Spring or Fall				
Rocky Mountain beeplant *Cleome serrulata*	64,000	Fall				
Common evening-primrose *Oenothera biennis*	1,376,000	Spring or Fall				SHORT-LIVED PERENNIAL
Fuzzytongue penstemon *Penstemon eriantherus*	358,000	Fall				
Lewis flax *Linum lewisii*	294,000	Spring or Fall				
Small burnet* *Sanguisorba minor*	55,000	Spring or Fall				
Blanketflower *Gaillardia aristata*	186,000	Spring or Fall				LONG-LIVED PERENNIAL
Dotted blazing star *Liatris punctata*	136,000	Spring or Fall				
Silky lupine *Lupinus sericeus*	20,000	Fall				
New England aster *Symphyotrichum novae-angliae*	1,100,000	Spring or Fall				
Purple prairie clover *Dalea purpurea*	317,000	Spring or Fall				
White prairie clover *Dalea candida*	278,000	Spring or Fall				
Prairie coneflower *Ratibida columnifera*	600,000	Spring or Fall				
Purple coneflower *Echinacea angustifolia*	128,000	Fall				
Silverleaf phacelia *Phacelia hastata*	153,000	Fall				
Maximilian sunflower *Helianthus maximiliani*	250,000	Spring or Fall				
Stiff sunflower *Helianthus pauciflorus*	85,000	Spring or Fall				
Sulphur-flower buckwheat *Eriogonum umbellatum*	140,500	Fall				
Sainfoin* *Onobrychis viciifolia*	18,500	Spring or Fall				
Common yarrow *Achillea millefolium*	2,850,000	Spring or Fall				

* non-native species